Important Advances in Clinical Medicine

Epitomes of Progress—Orthopedics

The Scientific Board of the California Medical Association presents the following inventory of items of progress in Orthopedics. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in Orthopedics which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Orthopedics of the California Medical Association and the summaries were prepared under its direction.

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Sickle Cell Disease in Orthopedics

SKELETAL ABNORMALITIES occur in patients with sickle cell anemia and its genetic variants because of abnormal circulating hemoglobin S. The orthopedist must learn both the orthopedic and hematological aspects of diagnosis and treatment of this disease complex.

The genetic variants (SC disease, s-thalassemia and sickle cell trait) affect a significant proportion of black people. Homoxygous (SS) sickle cell anemia becomes obvious with severe symptoms in early childhood.

The diagnosis of a variant is difficult unless suspected. Any black patient with an undiagnosed skeletal abnormality, especially avascular necrosis of bone or an atypical bone infection, should have hemoglobin electrophoresis. Symptoms in the variant form may be absent or mild and life expectancy may be normal. Symptoms begin later in life and only 50 to 60 percent of the patients have bone changes.

Avascular necrosis and bone infection are two of the most serious complications. Femoral head necrosis results often in bony collapse, although in younger patients, complete reconstitution of the femoral head may occur with a non-weight-bearing Legg-Perthes program. Some patients with homozygous disease (SS) have severe hip destruction, but may have minimal symptoms, probably because their general disease severely restricts their activities.

Surgical reconstruction of the hip may include varus osteotomy, fusion or arthroplasty. The necrotic humeral head may be bone grafted or a Neer prosthesis may help relieve pain.

The most common bacteria affecting bone is staphylococcus, but the Salmonella species and E. coli may also cause osteomyelitis.

The orthopedic surgeon should work closely with the anesthesiologist and hematologist in the management of these patients.

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